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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,777	06/01/2001	Bogdan Kosanovic	TI-32882	3090

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EXAMINER	
SHAH, NILESH R	

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/871,777	KOSANOVIC, BOGDAN	
	Examiner	Art Unit	
	Nilesh Shah	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9,10,17,18 and 20-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9,10, 17,18, 20-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-7, 9,10, 17,18, 20-34 are presented for examination.

Claim Objections

2. Claim 20 is objected to because it is dependent on a canceled claim 19. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).
Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1,17 and 28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application 09/871775.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the examiner can ascertain no difference between the claim of the present application and that of copending Application No. 09/871775. It is noted that the minor difference encompass replacement of the recitation of the limitations in the claims and it appears to be substantially the same or duplicate or in some instance obvious over one another.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 U SC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-7, 9,10, 17,18, 20- 28 31,33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (US 6,370,560, hereinafter Robertazzi) in view of Baker-Harvey (US 6,385,638).

7. A method of allocating processing resources to functions in a queue waiting to be executed, comprising:

   determining an amount of processing resources available to be assigned within a processor to the functions(col. 3, lines 1 – 8, col. 6, lines 18 – 36; col. 11, lines 55 – 67); determining an estimate of an amount of the processing resources needed for each function waiting in the a queue to execute(col. 5, lines 52 – 61; col. 6, lines 18 – 36); and allocating the available processing resources within said processor to the functions based on an allocation scheme(col. 2, lines 52 – 62, col. 5, lines 51 – 60). Robertazzi does not specifically teach the use of estimating the amount of the resources needed.

8. However it is well known to one of ordinary skill in the art that the amount of resources needed can be an estimate. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the option of estimating the amount to the existing system of Robertazzi because it would increase the accuracy of the amount of resources needed thus improving overall planning of the system and resources.

9. Robertazzi failed to teach the processing resource is within a processor. Nevertheless, Baker-Harvey discloses the allocating and scheduling the available processing resource on a processor to tasks (abstract, col. 1, lines 65 – 67, col. 2, lines 1 – 8). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made to include the feature of allocating and scheduling the available processing resource of a processor to computing tasks to ensure a minimum quality of service is provided to each running task (Baker-Harvey: abstract).

10. As per claim 2, Robertazzi teaches a method wherein the functions are decomposed elements of one or more algorithms(col. 3, lines 1 – 8, col. 6, lines 18 – 36; col. 11, lines 55 – 67); and

the functions allow management of their computational requirements (col. 11, lines 55 – 67).

11. As per claim 3, Robertazzi teaches a method wherein the functions within the one or more algorithms may be managed by to execute concurrently in the processor (col. 2, lines 52 – 62, col. 5, lines 51 – 60).

12. As per claim 4, Robertazzi teaches a method wherein said allocating comprises assigning each of the functions a separate priority within hierarchical priority scheme (col. 5 lines 51-60).

13. As per claim 5, Harvey teaches a method wherein each function is assigned a separate priority within the round-robin allocation scheme (col. 5, lines 12 – 17, 31 – 39, col. 6, lines 10 – 11).

14. As per claim 6, Robertazzi teaches a method further comprising:

assigning a resource throttling value to each function waiting in the queue to be executed, wherein the throttling value determines the reduction of the processing resources allocated to each of the functions (col. 11 lines 10 – 27 and 55 – 67; col. 9 lines 10 – 25).

15. As per claim 7, Robertazzi teaches a method wherein the allocation of the available processing resources to the functions waiting in the queue is conducted to optimize the amount of the processing resources assigned to the functions (col. 2, lines 52 – 62, col. 5, lines 51 – 60).

16. As per claim 9, Robertazzi teaches a method further comprising:

measuring the actual amount of processing resources used by each function within said processor(col. 3, lines 1 – 8, col. 6, lines 18 – 36; col. 11, lines 55 – 67);

determining a revised estimate of the amount of the processor resources needed for each function waiting in the queue to execute based on the measured amount of the processing resources used (col. 11 lines 10 – 27 and 55 – 67; col. 9 lines 10 – 25); and

reallocating the available amount of the processing resources to the functions in accordance with the revised estimate (col. 9 lines 10 – 25).

17. As per claim 10, Robertazzi teaches a method further comprising

comparing the measured amount of the processing resources used to a high threshold value (col. 11 lines 55 – 67); and

executing an alarm if the measured amount of the processing resources used exceeds the high threshold value (col. 11 lines 55 – 67).

18. Claim 17 is rejected based on the same rejection as claim 1 above.

19. Claims 18 and 20 are rejected based on the same rejection as claims 4-5 above.

20. As per claim 21, Robertazzi teaches a method further comprising:

for each instance, assigning an increasingly higher priority in accordance with an increasingly greater number of time periods passed since execution of a function waiting in said queue(col. 3, lines 1 – 8, col. 6, lines 18 – 36; col. 11, lines 55 – 67).

21. Claims 22-23 is rejected based on the same rejection as claims 9-10 above.

22. Claim 24 is rejected based on the same rejection as claim 6 above.

23. As per claim 25, Robertazzi teaches a method further comprising reducing the number of functions that may execute concurrently when the alarm is execute (col. 2, lines 52 – 62, col. 5, lines 51 – 60).

24. As per claim 26, Robertazzi teaches a method wherein said determining comprises estimating said amount of processing resources that do not exceed a total processing resources of said processor (col. 11 lines 10 – 27 and 55 – 67; col. 9 lines 10 – 25).

25. As per claim 27, Robertazzi teaches a method further comprising:
controlling each function to execute within an allocated processing resource in said processor according to said allocation scheme(col. 3, lines 1 – 8, col. 6, lines 18 – 36; col. 11, lines 55 – 67); and
controlling each function to cease execution according to a degradation scheme if a sum said function executions exceed a total processing capacity of said processor that is allocated to said algorithm(col. 2, lines 52 – 62, col. 5, lines 51 – 60).

26. Claim 28 is rejected based on the same rejection as claim 1 above.

27. Claim 31 is rejected based on the same rejection as claim 9 above.

28. Claim 33 is rejected based on the same rejection as claim 10 above.

29. Claim 34 is rejected based on the same rejection as claim 2 above.

30. Claims 29, 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (US 6,370,560, hereinafter Robertazzi) in view of Baker-Harvey (US 6,385,638), and further in view of Applicant's admitted prior art (hereinafter AAPA).

31. As per claim 29, as modified Robertazzi discloses the load determining means comprises an estimating means for estimating processing resource consumption of each function (Harvey: fig. 3 and col. 7, lines 44 – 49), and for updating said consumption processing resource estimation when a state of each function changes (Harvey: col. 5, lines 36 – 39, 54 - 57). Modified Robertazzi did not specifically disclose the processing resource including the millions of instruction per second (MIPS). Nevertheless, AAPA discloses that processor resource including MIPS which can be allocated to one or more functions or multiple states of a function is considered well know in the art (specification page 1, lines 19 – 22). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to incorporate AAPA's teaching to modified Robertazzi so that a variety of computing resources can be considered for better planning and more efficient in resource allocation.

32. As per claim 30, as modified Robertazzi discloses the allocating means comprises an assigning means for assigning an allocation of processing resources, within the processor, for determining a total processing resource available within the processor available for processing (Robertazzi: col. 3, lines 1 – 8 and col. 6, lines 18 – 36), and for assigning an allocation of processing resource for execution of each function according to the allocation scheme (Robertazzi: col. 2, lines 52 - 62 and col. 5, lines 51 – 60). Modified Robertazzi did not specifically disclose the processing resource including the millions of instruction per second (MIPS). Nevertheless, AAPA discloses processor resource including MIPS which can be allocated to one or more functions or multiple states of a

function is considered well know in the art (specification page 1, lines 19 – 22). It would have been obvious for one of an ordinary skill in the art, at the time the invention was made, to incorporate AAPA's teaching to modified Robertazzi so that a variety of computing resources can be considered for better planning and more efficient in resource allocation.

33. Claim 32 is rejected based on the same rejection as claim 29 above.

Response to Arguments

34. Applicant's arguments with respect to claims 1-7, 9,10, 17,18, 20-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh Shah whose telephone number is (571)272-3771. The examiner can normally be reached on 9-5. The examiner can normally be reached on 9-5.Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nilesh Shah
Examiner
Art Unit 2195

NS
April 12, 2005

MAJID BANANKHAH
PRIMARY EXAMINER